

AMENDMENTS TO THE CLAIMS

1-4. Canceled

5. (Previously Presented) A product, comprising:

a surface; and

a code on said surface for determination of at least one position in a first direction,

wherein said code for position-coding in said first direction comprises at least one first main number series, which has the property that the place in the first main number series of each number sequence of a first predetermined length is unambiguously determined, said position being determinable based on at least one such number sequence of the first predetermined length, and

wherein the orientation of said code is discriminable from the first main number series, but only for number sequences of a second predetermined length that exceeds the first predetermined length.

6. (Previously Presented) The product as set forth in claim 5, wherein said orientation is discriminable from the occurrence of nonallowed number combinations in said number sequences of the second predetermined length.

7. (Previously Presented) The product as set forth in claim 5, wherein no number sequence of the second predetermined length in the first main number sequence occurs in a reversed form in the first main number sequence.

8. (Previously Presented) The product as set forth in claim 7, wherein said code is represented by a set of symbols which each code one number in the first main number series, and wherein said set comprises two unique symbols that are assigned the same number and which are indistinguishable on a rotation of 180° of one to the other.

9. (Previously Presented) The product as set forth in claim 5, wherein the first main number sequence is binary, and wherein no number sequence of the second predetermined length in the first main number sequence occurs in a reversed and inverted form in the first main number sequence.

10. (Previously Presented) The product as set forth in claim 9, wherein said code is represented by a set of symbols which each code one binary number in the first main number series, and wherein said set comprises two unique symbols which are indistinguishable on a rotation of 180° of one to the other, one of said symbols being assigned the inverse binary number of the other symbol.

11. (Previously Presented) The product as set forth in claim 5, wherein the place in the first main number series of each number sequence of the second predetermined length is unambiguously determined.

12. (Previously Presented) The product as set forth in claim 5, wherein the first predetermined length is six numbers, and the second predetermined length is eight numbers.

13. (Previously Presented) The product as set forth in claim 5, wherein said code comprises a plurality of parallel first main number series, and wherein adjacent first main number series are relatively shifted by a predetermined displacement, said position in the first direction being determinable based on a predetermined number of such displacements.

14. (Previously Presented) The product as set forth in claim 5, wherein said first main number series is cyclic.

15. (Previously Presented) The product as set forth in claim 5, wherein said code comprises at least one second main number series which corresponds to the first main number series with respect to its properties for position determination and orientation discrimination, the first and second main number series being arranged on the surface such that a rotation of the code by 90°, 180° and 270° is discriminable from at least one of the first and second main number series.

16. (Previously Presented) The product as set forth in claim 15, wherein a rotation of the code by 90° is discriminable from the first main number series only, and a rotation of the code by 270° is discriminable from the second main number series only.

17. (Previously Presented) The product as set forth in claim 15, wherein a rotation of the code by 180° is separately discriminable from either of the first and second main number series.

18. (Previously Presented) The product as set forth in claim 15, wherein at least one position in a second direction is determinable based on the second main number series.

19. (Previously Presented) The product as set forth in claim 18, wherein the first and second directions are mutually orthogonal.

20. (Previously Presented) The product as set forth in claim 15, wherein said code comprises a plurality of parallel first main number series and a plurality of parallel second main number series, said first and second main number series being arranged mutually orthogonal.

21. (Previously Presented) The product as set forth in claim 15, wherein said first and second main number series are identical.

22. (Previously Presented) The product as set forth in claim 15, wherein said number sequence of the second predetermined length on the surface maps on a corresponding number sequence of the second main number series upon a rotation of said code by 90° or 270°.

23. (Previously Presented) The product as set forth in claim 5, wherein said code comprises at least one second main number series for position-coding in a second direction.

24. (Previously Presented) The product as set forth in claim 23, wherein said code comprises a two-dimensional array of graphical symbols that each represents one of at least four different values, and wherein the value of each symbol is translatable to at least one first number of said at least one first main number series and at least one second number of said at least one second main number series.

25. (Previously Presented) A method for providing a code on a surface, to code at least one position in a first direction on the surface, said method comprising:

using at least one first main number series, which has the property that the place in the first main number series of each number sequence of a first predetermined length is unambiguously determined and which also discriminates the orientation of the code, but only for number sequences of a second predetermined length that exceeds the first predetermined length;

determining at least one number sequence of the first predetermined length that codes said at least one position; and

applying to the surface at least one number sequence of the second predetermined length that includes the thus-determined number sequence(s) of the first predetermined length.

26. (Previously Presented) The method as set forth in claim 25, wherein said orientation is discriminable from the occurrence of non-allowed number combinations in said number sequences of the second predetermined length.

27. (Previously Presented) The method as set forth in claim 25, wherein no number sequence of

the second predetermined length in the first main number sequence occurs in a reversed form in the first main number sequence.

28. (Previously Presented) The method as set forth in claim 27, further comprising: representing said at least one number sequence of the second predetermined length by a set of symbols which each code one number in said first main number series, wherein said set comprises two unique symbols that are assigned the same number and which are indistinguishable on a rotation of 180° of one to the other.

29. (Previously Presented) The method as set forth in claim 25, wherein the first main number sequence is binary, and wherein no number sequence of the second predetermined length in the first main number sequence occurs in a reversed and inverted form in the first main number sequence.

30. (Currently Amended) The method ~~product~~ as set forth in claim 29, further comprising: representing said at least one number sequence of the second predetermined length by a set of symbols which each code one binary number in the first main number series, wherein said set comprises two unique symbols which are indistinguishable on a rotation of 180° of one to the other, one of said symbols being assigned the inverse binary number of the other symbol.

31. (Previously Presented) The method as set forth in claim 25, wherein the place in the first main number series of each number sequence of the second predetermined length is

unambiguously determined.

32. (Previously Presented) The method as set forth in claim 25, wherein the first predetermined length is six numbers, and the second predetermined length is eight numbers.

33. (Previously Presented) The method as set forth in claim 25, further comprising: determining a plurality of parallel number sequences of the first predetermined length, wherein adjacent number sequences have a predetermined difference between their places in the first main number series, a predetermined number of such differences coding said position in the first direction; and applying to the surface said plurality of parallel number sequences of the first predetermined length, wherein at least one such number sequence is applied as included in a number sequence of the second predetermined length.

34. (Previously Presented) The method as set forth in claim 25, wherein said first main number series is cyclic.

35. (Previously Presented) The method as set forth in claim 25, further comprising: using at least one second main number series which corresponds to the first main number series with respect to its properties for position determination and orientation discrimination; and applying subsets of the first and second main number series to the surface such that a rotation of the code by 90°, 180° and 270° is discriminable from at least one of said subsets.

36. (Previously Presented) The method as set forth in claim 35, wherein a rotation of the code by 90° is discriminable from a subset of the first main number series only, and a rotation of the code by 270° is discriminable from a subset of the second main number series only.

37. (Previously Presented) The method as set forth in claim 35, wherein a rotation of the code by 180° is separately discriminable from a subset of either the first or the second main number series.

38. (Previously Presented) The method as set forth in claim 35, wherein at least one position in a second direction is determinable based on the second main number series.

39. (Previously Presented) The method as set forth in claim 38, wherein the first and second directions are mutually orthogonal.

40. (Previously Presented) The method as set forth in claim 35, further comprising: applying a plurality of parallel first main number series and a plurality of parallel second main number series to the surface in a mutually orthogonal relationship.

41. (Previously Presented) The method as set forth in claim 35, wherein said first and second main number series are identical.

42. (Previously Presented) The method as set forth in claim 35, further comprising: applying said number sequence of the second predetermined length on the surface such that it maps on a corresponding number sequence of the second main number series upon a rotation of said partial surface by 90° or 270°.

43. (Previously Presented) The method as set forth in claim 25, further comprising using at least one second main number series for position-coding in a second direction.

44. (Previously Presented) The method as set forth in claim 43, further comprising: forming a two-dimensional array of graphical symbols that each represents one of at least four different values, wherein the value of each symbol is translatable to at least one first number of said at least one first main number series and at least one second number of said at least one second main number series; and applying the two-dimensional array to the surface.

45. (Previously Presented) A method of determining a position, in a first direction, of an arbitrary partial surface of a predetermined size on a surface which is provided with a position code, which for the position coding in the first direction is based on at least one first main number series, which has the property that the place in the first main number series of each number sequence of a first predetermined length is unambiguously determined and which discriminates the orientation of said position code, but only for number sequences of a second predetermined length that exceeds the first predetermined length, said method comprising:

identifying at least one number sequence of the second predetermined length from the

position code on the partial surface;

identifying a correct orientation of said partial surface based on the thus-identified number sequence of the second predetermined length,

identifying a correctly oriented number sequence of the first predetermined length from the position code on the partial surface; and

determining said position based on said correctly oriented number sequence of the first predetermined length.

46. (Previously Presented) The method as set forth in claim 45, wherein said identifying of a correct orientation comprises determining the orientation of said partial surface based on the thus-identified number sequence.

47. (Previously Presented) The method as set forth in claim 45, wherein said identifying of a correct orientation comprises sequentially evaluating the thus-identified number sequence for possible orientations of said partial surface until a correct orientation is determined.

48. (Previously Presented) The method as set forth in claim 45, wherein said orientation is discriminable from the occurrence of non-allowed number combinations in the thus-identified number sequence.

49. (Previously Presented) The method as set forth in claim 45, wherein no number sequence of the second predetermined length in the first main number sequence occurs in a reversed form in the first main number sequence.

50. (Previously Presented) The method as set forth in claim 45, wherein the first main number sequence is binary, and wherein no number sequence of the second predetermined length in the first main number sequence occurs in a reversed and inverted form in the first main number sequence.

51. (Previously Presented) The method as set forth in claim 45, wherein the first predetermined length is six numbers, and the second predetermined length is eight numbers.

52. (Previously Presented) The method as set forth in claim 45, further comprising: identifying a plurality of correctly oriented number sequences of the first predetermined length; determining for each such number sequence a position number that reflects the place of the number sequence in the first main number sequence; determining differences in position numbers for adjacent number sequences; and determining said position in the first direction based on a predetermined number of said differences.

53. (Previously Presented) The method as set forth in claim 45, for determining a position in a first and a second direction, wherein the position code for position coding in the second direction is based on at least one second main number series which corresponds to the first main number series with respect to its properties for position determination and orientation discrimination, said method comprising: identifying a correct orientation of said partial surface based on a number sequence of the second predetermined length belonging to at least one of the first and second

main number sequences.

54. (Previously Presented) The method as set forth in claim 53, further comprising: detecting a rotation of the partial surface by 90° based exclusively on a number sequence of the second predetermined length belonging to the first main number series, and detecting a rotation of the partial surface by 270° based exclusively on a number sequence of the second predetermined length belonging to the second main number series.

55. (Previously Presented) The method as set forth in claim 53, further comprising: detecting a rotation of the partial surface by 180° based on a number sequence of the second predetermined length belonging to either one of the first and second main number series.

56. (Previously Presented) The method as set forth in claim 53, further comprising: determining said position in the second direction based on at least one correctly oriented number sequence of the first predetermined length belonging to the second main number series.

57. (Previously Presented) The method as set forth in claim 53, wherein the first and second directions are mutually orthogonal.

58. (Previously Presented) The method as set forth in claim 53, wherein the first and second main number series are mutually orthogonal.

59. (Previously Presented) The method as set forth in claim 53, wherein the first and second main number series are identical.

60. (Previously Presented) The method as set forth in claim 45, further comprising determining a position in a second direction based on at least one second main number series.

61. (Previously Presented) The method as set forth in claim 60, further comprising: identifying a plurality of symbols on the partial surface; determining a value of each of said symbols; translating the value of each symbol into at least one first number and at least one second number; and identifying, based on the first and second numbers, at least one number sequence of the second predetermined length.

62. (Previously Presented) The method as set forth in claim 61, further comprising: forming first and second sets of said first numbers and second numbers, respectively; identifying at least one number sequence of the second predetermined length in each of the first and second sets; and designating the first and the second position to a position value given by the first and second sets, respectively, whenever the number sequence of the second predetermined length fulfills a predetermined orientation criterion in both the first and the second set.

63. (Previously Presented) The method as set forth in claim 62, wherein the second predetermined length in the first main number series is identical to the second predetermined length in the second main number series.

64. (Previously Presented) A computer-readable computer program product which comprises a computer program with instructions to cause the computer to implement the method as set forth in any one of claims 25-63.

65. (Previously Presented) A device for position determination, comprising a sensor for producing an image of a partial surface of a surface which is provided with a position code, and image processing means which are arranged to calculate based on the subset of the position code which is to be found in the image of the partial surface a position of the partial surface in accordance with the method as set forth in any one of claims 45-63.

66. (Previously Presented) The device as set forth in claim 65, which is handheld.

67. (Previously Presented) The device as set forth in claim 65, which has means for wireless transmission of position information.